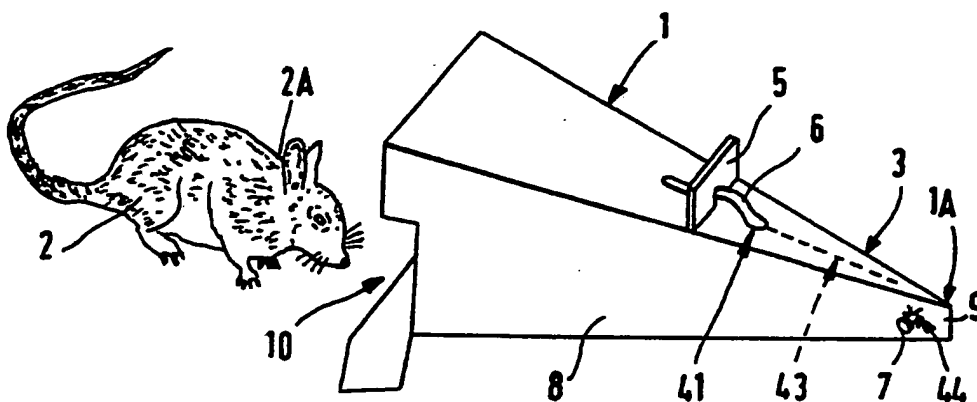




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: **MOUSE TRAP**

(57) Abstract

The invention relates to a mouse trap (1), consisting of means for catching and killing any mouse (2) which may find its way into the trap, which is simple and economical to manufacture, store and transport and which permits easily handling. The mouse-receiving space (3) of the trap is formed from a foldable sheet consisting of cardboard or some other appropriate material with a moving device (5) capable of killing a mouse accommodated internally within said space and connected to a spring pressure device (6) so arranged as to actuate said device (5) for the purpose of triggering same at the moment of catching.

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Mouse trap

The present invention relates to a mouse trap, consisting of means for catching and killing any mouse which may find its way into the trap, and the mouse-receiving space of the trap is formed from a foldable
5 sheet consisting of cardboard or some other suitable material, with a moving device capable of killing a mouse accommodated internally within said space and connected to a spring pressure device so arranged as to actuate said device for the purpose of triggering same at the moment of
10 catching.

The principal object of the present invention is essentially to make available a mouse trap of the kind described, which is suitable for use as a disposable trap and which as such is simple and inexpensive to produce
15 with a tripping mechanism of a unique kind which functions reliably and effectively, which trap is suitable for use without the user having to come into contact with the mouse in the trap when it has been caught.

Said object is achieved by means of an arrangement in accordance with the present invention, which is characterized essentially in that the mouse-killing device consists of a plate with an opening to permit passage by a mouse, along one edge of which opening there extends an element for cutting and/or strangling the mouse and that
20 the casing of the trap exhibits an area along one side specially weakened so as to allow the spring to pass through it, which weakened area is preferably formed by the pre-perforation of the casing for an intended distance along the casing, through which one end of the spring is
25 intended to project, upon the trap being triggered, from the internal space of the trap.

The invention is described below as a preferred illustrative embodiment, in conjunction with which reference is made to the accompanying drawings, in which
35 Fig. 1 shows a perspective view of a trap in

use;

Fig. 2 shows the outside of a flat sheet of the kind referred to, from which the trap is produced;

5 Figs. 3-5 show various component parts which are included in the intended trap; and

Figs. 6A-6E and

Figs. 7-12 show different stages in the assembly of a trap of the kind referred to here.

10 A mouse trap 1 in accordance with the present invention comprises, in a previously disclosed fashion, appropriate means for catching and killing any mouse 2 which may find its way into the trap 1. The mouse-receiving space 3 of the trap is formed from a foldable sheet 4 consisting of cardboard or some other suitable
15 material, which is capable of being folded into the intended shape and yet of withstanding the effect of external stresses. For example, the sheet may be coated with a suitable moisture-resistant substance, at least on its outside surface.

20 A moving device 5, which is intended to affect a mouse 2 in such a way that it dies, is capable of being accommodated internally within said formed space 3 and is connected to a spring pressure device 6 so arranged as to actuate the moving device 5 for the purpose of triggering
25 same at the moment of catching.

A securing device 7, which can consist of a separate component part, for example a pin which interacts with the casing 8 of the assembled trap, or which can
30 consist of a component part which is permanently attached to the casing of the trap, for example a cut-out, etc., is included finally amongst those means from which the trap 1 is intended to be produced when same is assembled.

The assembled mouse-receiving space 3, which exhibits a closing end wall 9 at one end 1A of the trap at
35 a certain distance from the intended entrance opening 10 to the trap, appropriately tapers in the direction of said one end 1A of the trap, preferably in the form of a wedge,

and is formed from front parts 11A-15A of the enclosing wall parts 11-15 of the trap.

The trap casing sheet 4 which encloses said space thus exhibits a plurality of wedge-shaped wall parts 11-15 which are divided from one another laterally by means of folds 16, 17, 18, 19, with the illustrative example showing an arrangement of five wall parts 11-15, although wall parts of a different number and arranged in a different form can naturally be present, depending on the form of the intended trap.

A number of fixing tabs 20, 21 with matching receiving openings 22, 23 can also be arranged on a number of said wall parts 11-15, such as on one lateral boundary edge 24 of a wall part 15 and on a fold 16 between two wall parts 11, 12. Said fixing tabs 20, 21 are so arranged, once the wall parts 11-15 have been folded about the respective folds 16-19, as to be capable of being introduced through the matching tab-receiving opening 22, 23 and of being retained for the purpose of being locked in engagement.

The trap 1 can also exhibit a number of anti-tipping supports 25, 26 projecting laterally from the trap 1 for the purpose of preventing it from falling over, which supports are preferably in the form of tongues in the sheet 4 executed laterally in wall parts 12, 14 through slits.

There extends through at least one of said wall parts 13, 11, 15 a number of openings 27, 28, 29, 30, 31 so adapted as to be capable of receiving the moving mouse-killing device 5, in conjunction with which a long, slot-shaped opening 27 is intended to be penetrated fully by the device 5, whilst openings 28, 29, 30, 31 of shorter length and arranged in pairs, for example, are intended to receive and locate projecting tip-preventing feet 32, 33 arranged on the mouse-killing device 5.

Said mouse-killing device 5 consists of a plate made of a suitable material, such as plastic, metal, etc.,

and is provided with an internal opening 34 to permit passage by a mouse, along one edge 35 of which opening there extends an element for cutting and/or strangling the mouse, which element may appropriately be formed by said edge itself, for example by the edge 35 being ground or in some other way arranged so as to be capable of acting against the neck 2A or some other part of the body of a mouse 2.

Said tip-preventing feet 32, 33 can be situated on the under side of the device 5 and can between them exhibit a receiving opening 36 capable of accommodating a part of said spring pressure device 6, such that the plate 5 can be attached to the spring pressure device 6, before the trap is triggered, for the purpose of guiding same internally within the mouse-receiving space 3 of the trap.

The plate 5 which functions as a mouse-killing device, with its pairs of feet 37, 38 which are executed to either side of the central opening 34 in the plate and are capable of being accommodated by the opening 27 in the trap as the plate 5 is introduced through the opening 27, is also connected to the spring pressure device 6 at a point outside said mouse-receiving space 3 of the trap.

The spring pressure device 6 can, for example, be executed from a wire-like material with pairs of spring ends 39, 40 projecting in pairs from a wire-like common spring pressure centre part 6A and one spring end 40 can be so arranged as to interact with one wall of the trap, preferably its base 13, internally within the space, both in the set position and in the triggered position. The other end 39 of the spring pressure device is so arranged as to be capable of projecting through an opening 41 in a wall part 13 of said assembled casing 8 of the trap in the set position, as illustrated in Fig. 1, 6A and 9 in the drawings, and is attached to the mouse-killing plate 5, preferably so arranged as to extend through an upper spring-receiving opening 42 in same.

The casing of the trap also exhibits a weakened

area 43 allowing the spring to pass through and thus arranged first as a component which closes the mouse-receiving space 3 of the trap, which extends along the wall part 13 on one side of the casing. The area 43 which
5 allows the spring to pass through is preferably formed by the pre-perforation of the casing 8 through one wall part 13 for an intended distance L along the casing 8, through which one end 39 of the spring is intended to project when the trap 1 is triggered from the internal space 3 of the
10 trap in the direction of the closed end 1A of the trap.

The spring pressure device 6, which is so arranged as to be retained in position in the internal space 3 of the trap by means of a securing device 7, for example by said securing device 7 being accommodated in
15 receiving openings 44, 45 arranged in pairs each in its own side wall part 12, 14, is forcibly actuated, with the trap 1 in a state in which it is ready to be tripped, by a wire or some other suitable securing means 46 in such a way as to be held in the sprung position I in which it is
20 ready to be tripped, as shown in Figs. 5 in the drawings.

The function of the trap 1 should have been appreciated to some extent from the foregoing, although there now follows a brief description of the procedure for the assembly of a trap as described above and illustrated
25 in the drawings, after having been supplied to the user in the form of a flat package containing the various components:

The cardboard sheet 4 is first folded along its said folds 16-19, whereupon one end 39 of the spring 6 is
30 introduced from the inside 4A of the sheet 4 through the opening 41 in the direction A from the front part 4B of the sheet towards its opposing part 4C. The spring 6 continues to be introduced until the wire, etc., 46 comes up against an obstruction and can be inserted no further.

35 The sheet 4 is then folded up about the folds 16-19 and is secured together by means of the fixing tabs, etc., 20, 21 which are introduced into matching openings

22, 23 with the spring 6 enclosed by the casing 8 thus formed by the sheet 4.

5 The moving device 5 is introduced from outside through the slit 27, with the aforementioned feet 32, 33 being passed through the slit 27 first, making sure that the end 39 of the spring projecting from the trap is accommodated in the opening 34 in the device 5, so that the end 40 of the spring which extends along the bottom, etc., of the trap and is situated in the assembled mouse-receiving space 3 of the trap is guided between the feet 10 32, 33 on the device 5 and is retained in position when the feet 32, 33 are introduced through the openings 28-31, and in this way the device 5 and the spring 6 are prevented from falling over when the trap is arranged in 15 its said set position. The upper end 39 of the spring is accommodated at the same time in a matching opening 42 in the device 5.

20 The spring 6 is then secured by means of the plastic pin, etc., 7, which is introduced through the openings 44, 45 in the casing and through the hole 47 in the spring formed from turns of the spring 6.

25 With the trap 1 in its set state, bait of a suitable kind, for instance cheese, is then placed in the internal space 3A of the trap beyond the wire, etc., 46 which retains said spring.

30 Thus, when a mouse 2 discovers the bait in the trap 1, it gnaws through the wire 46 in a familiar fashion in order to gain access to the bait behind same, in conjunction with which the previously forcibly restrained spring force of the spring is now free to exert its effect. In this way the upper free end 39 of the spring is caused to move away from the other end 40 of the spring which acts against the bottom of the trap, in so doing causing the device 5 to be pulled upwards through the 35 interaction of the spring with said device 5, this being the opening 42 in the case of the example shown here, in the direction of the arrow 48, in conjunction with which

the mouse 2 is choked by the effect of the edge 35 of the opening in the device or is held in some other way against the roof of the trap and is killed in a bloodless fashion, and is then discarded together with said trap 1 without
5 the need to open the trap and to come into contact with the mouse. The means that it is possible for anyone at all to use the trap without feeling uncomfortable, amongst other things since the mouse is not visible from the outside of the trap.

10 An important effect of the trap is the aforementioned spring 6 and its attachment to the casing 8 of the trap and its interaction with same. The upper end 39 of the spring is able to move freely at the time of the trap 1 being triggered, and to move away in an upward
15 sense and to pivot about the front spring part 6A of the spring in the direction of the arrow 49. This causes the weakened area 43 of the casing 8 of the trap to be torn apart in a direction away from the spring attachment opening 41 towards the end 1A of the trap, so that the end
20 39 of the spring is allowed to continue to pivot upwards in the direction of the arrow 49. Said weakened area 43, which permits the spring to exit more easily from the casing 8 of the trap, prevents access to the bait by mice from outside the trap, forcing them to enter through the
25 opening 10 of the trap before the mouse is caught.

The assembled trap 1 adopts rectangular form in the embodiment described here, in conjunction with which one wall part 15 is positioned on top of another wall part 11, these being the two wall parts 11, 15 situated at the
30 extreme edges of the sheet 4, although the possibility also exists for dispensing with the additional wall part 15, and arranging locking tongues on a preceding wall part 14 and matching locking slits inside the free end edge 51 of the other outer wall part.

35 The form of the device 5 and the internal space of the trap in the area 52 in which the device 5 acts inside the casing are adapted to one another in such a way

that they align with one another essentially so that a mouse is unable to find its way through between the device and the internal walls, floor and roof of the casing.

5 Finally, it can be stated that two of the wall parts 12, 14 exhibit a certain width B at the front ends of the parts, whilst other wall parts 11, 13, 15 are pointed at their front end. A pointed tip to the casing of the trap is formed in this way, which extends upwards as a straight part with a gap between said wall part tips, such
10 that the casing of the trap adopts a form similar to that of a slice of cake, but with a raised rear part.

The invention is not, however, restricted to the illustrative embodiment described above and illustrated in the drawings, but may be freely modified within the scope
15 of the Patent Claims without departing from the idea of invention. For example, it is possible to cause the moving mouse-killing part to be rigidly attached to the spring pressure device, and also to cause it to be a part of the spring pressure device itself, for example a curved, arm-
20 like clamping device which extends across the moving spring end of said spring pressure device.

The trap 1 can of course also be delivered with the casing 8 already mounted with the device 5 only having
25 to be attached to the spring 6 which is shown in Fig 6C.

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P a t e n t C l a i m s

1. A mouse trap (1), consisting of means for catching and killing any mouse (2) which may find its way into the trap (1), and the mouse-receiving space (3) of the trap is formed from a foldable sheet (4) consisting of cardboard or some other appropriate material, with a moving device (5) capable of killing a mouse (2) accommodated internally within said space (3) and connected to a spring pressure device (6) so arranged as to actuate said device (5) for the purpose of triggering same at the moment of catching, characterized in that the mouse-killing device (5) consists of a plate with an opening (34) to permit passage by a mouse, along one edge (35) of which opening there extends an element for cutting and/or strangling the mouse, that the casing (3) of the trap exhibits an area (43) along one side specially weakened so as to allow the spring to pass through it, which weakened area is preferably formed by the pre-perforation of the casing (3) for an intended distance (L) along the casing (3), through which one end (39) of the spring is intended to project, upon the trap (3) being triggered, from the internal space of the trap.

2. Trap according to Patent Claim 1, characterized in that the formed mouse-receiving space (3) tapers in the direction of the closed end (1A) of the trap.

3. Trap according to Patent Claim 2, characterized in that the sheet (4) enclosing the space exhibits a plurality of wedge-shaped wall parts (11-15) delimited by folds (16-19) and with fixing tabs (20, 21) and matching receiving openings (22, 23) on a number of said wall parts, with preferably five wall parts being present.

4. Trap according to Patent Claim 2, characterized in that a number of lateral anti-tipping supports (25, 26) projecting laterally from the trap (1) are in the form of tongues (25, 26) executed laterally in wall parts (12, 14).

5. Trap according to any of the Patent Claims 3-4, characterized in that wall parts (11, 12) exhibit slits (22, 23) so adapted as to accept fixing tabs (20, 21) which project from one delimiting edge (24) of the sheet.

5 6. Trap according to any of the above Patent Claims 3-5, characterized in that openings (27-31) so adapted as to receive the moving mouse-killing device (5) extend through at least one of said wall parts (11, 13, 15).

10 7. Trap according to any of the above Patent Claims, characterized in that the lower end of the plate exhibits projecting tip-preventing feet (32, 33) capable of interacting with the enclosing wall of the trap.

15 8. Trap according to any of the above Patent Claims, characterized in that the plate (5) is connected to the spring pressure device (6) outside said mouse-receiving space (3) of the trap.

20 9. Trap according to any of the above Patent Claims, characterized in that the spring pressure device (6) is formed from a wire-like material with spring ends (39, 40) projecting as a pair from a common spring pressure part (6A), one of which spring ends projects through an opening (41) in the formed casing (3) of the trap and is attached via its free spring end to the mouse-killing plate (5), preferably through a receiving opening (42) in the plate (5).

25 10. Trap according to any of the above Patent Claims, characterized in that the spring pressure device (6), which is so arranged as to be retained in position in the internal space (3) of the trap by means of a securing device (7) interacting with the casing (3) of the trap, is capable of being forcibly restrained by a wire (46) or some other suitable securing means with the trap in a state in which it is ready to be triggered.

FIG. 1

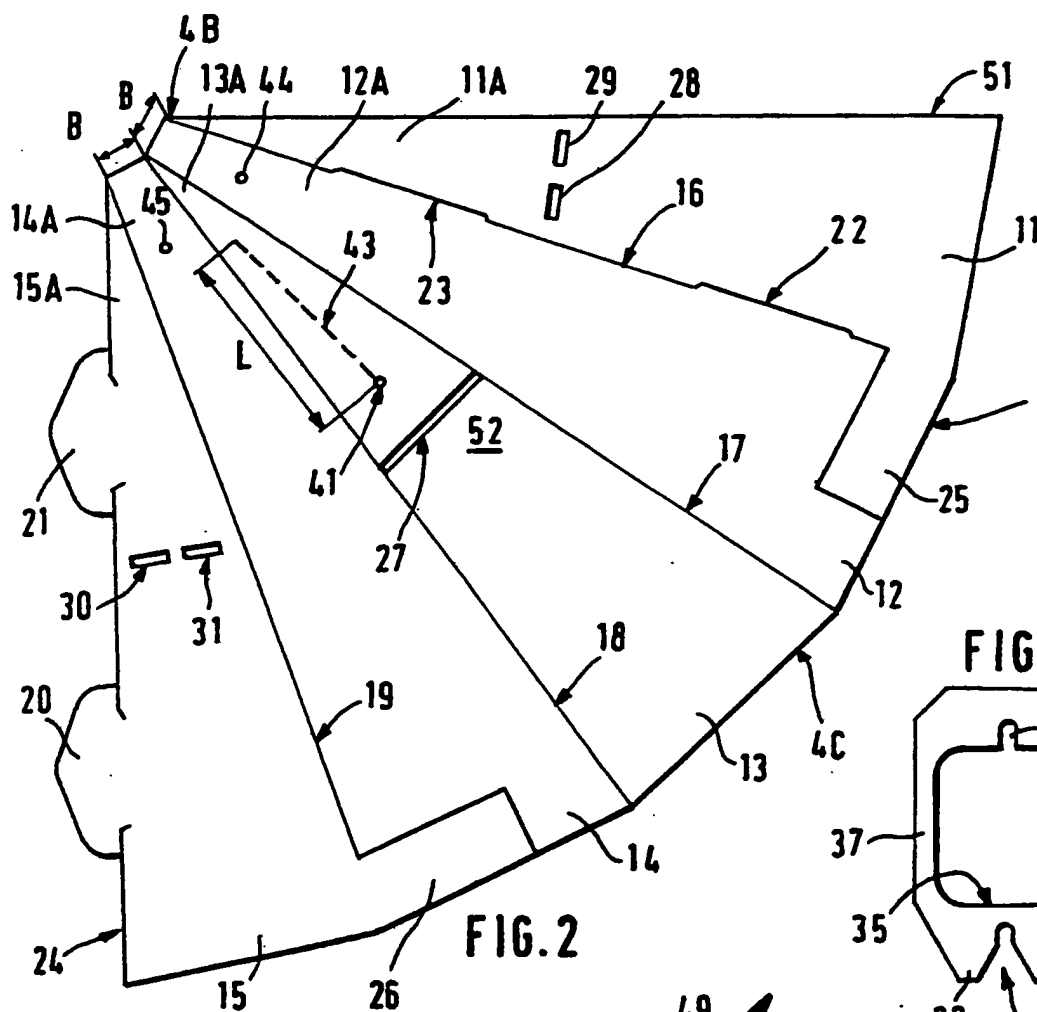
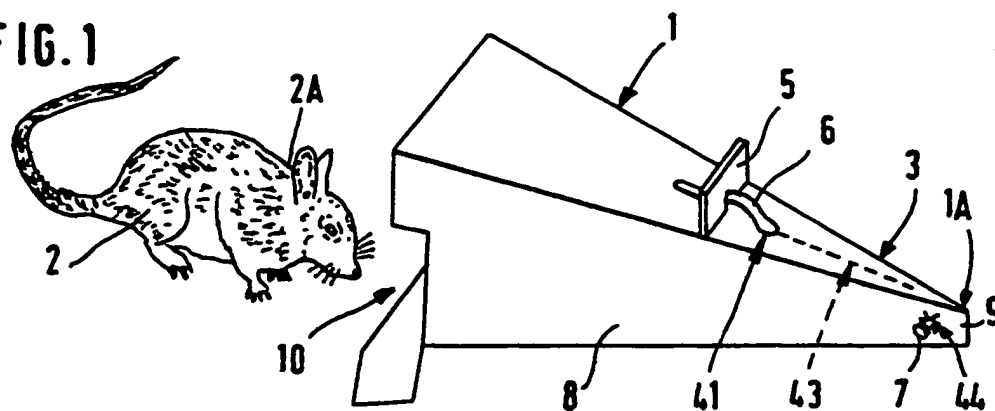


FIG. 3

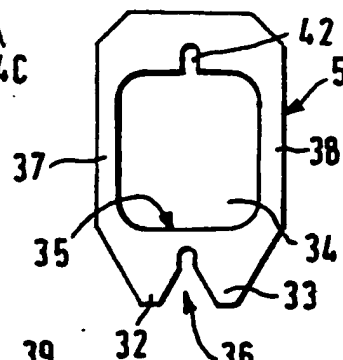
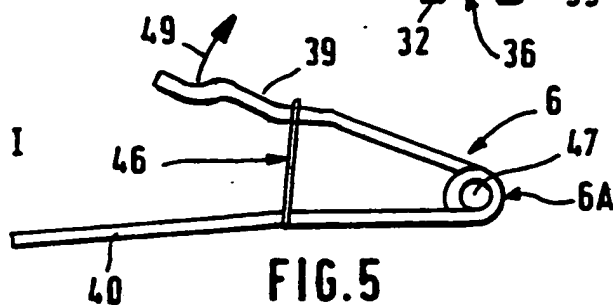


FIG. 4



FIG. 5



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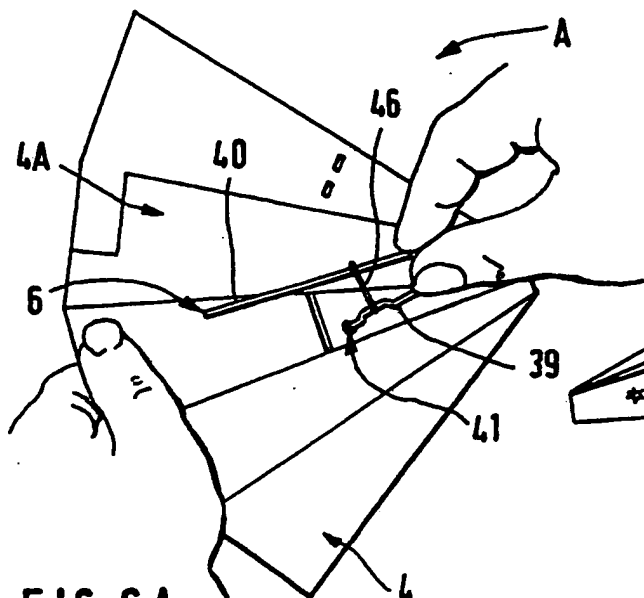


FIG. 6A

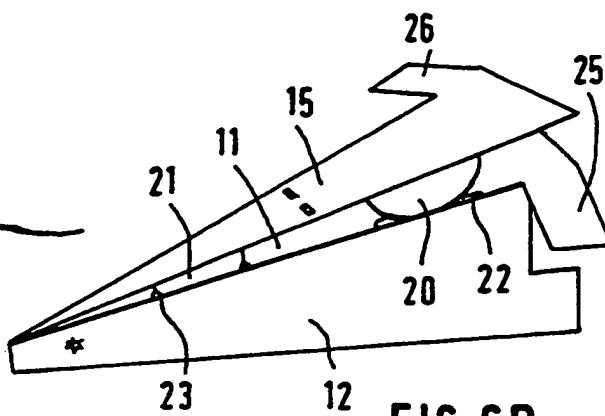


FIG. 6B

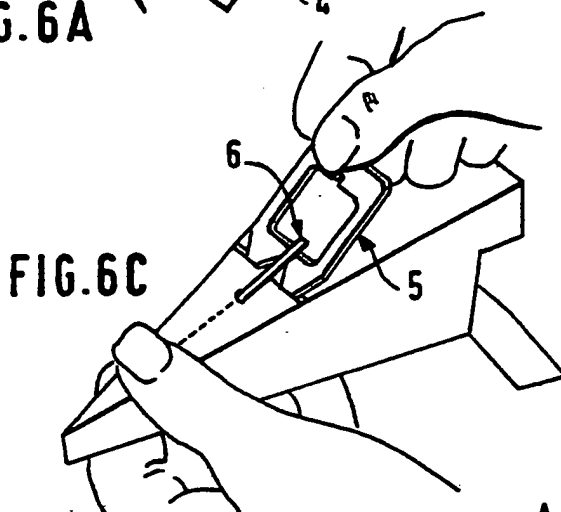


FIG. 6C

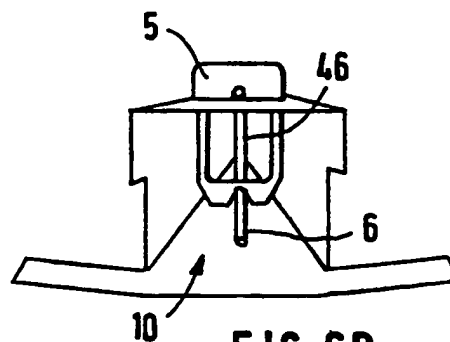


FIG. 6D

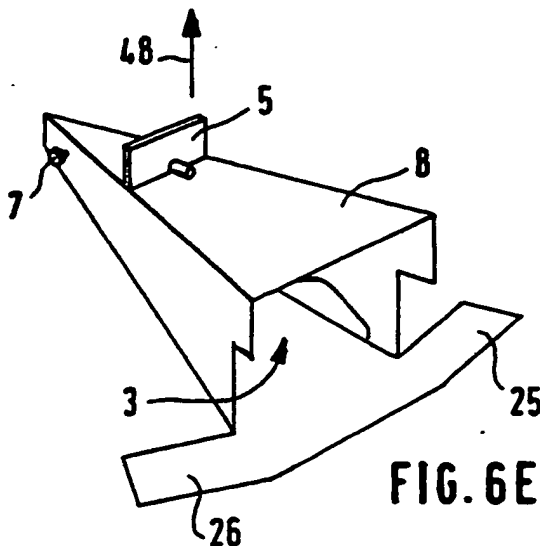
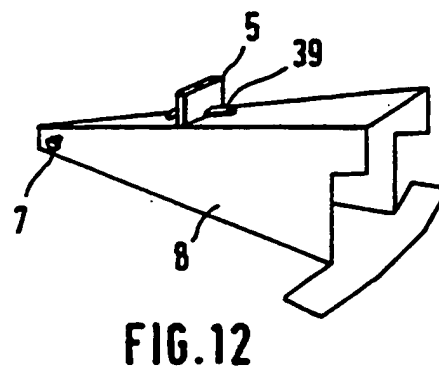
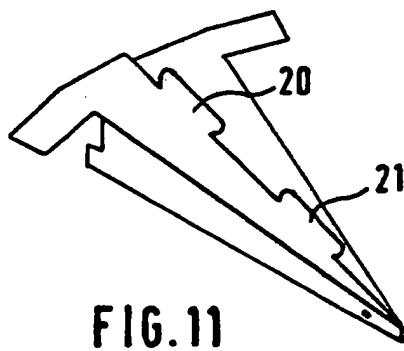
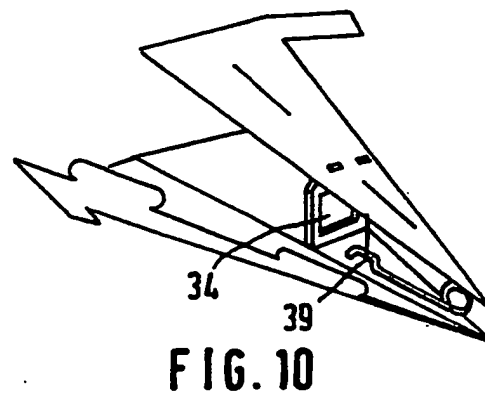
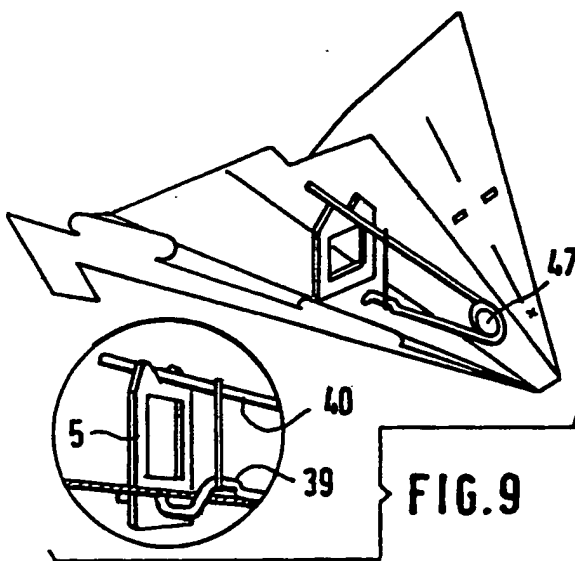
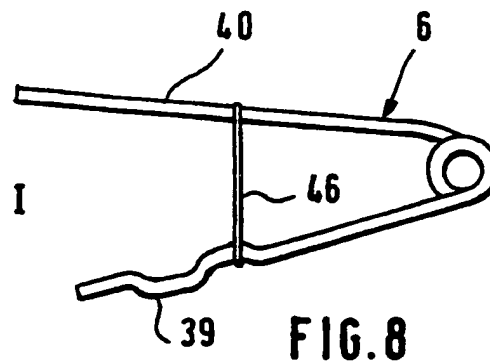
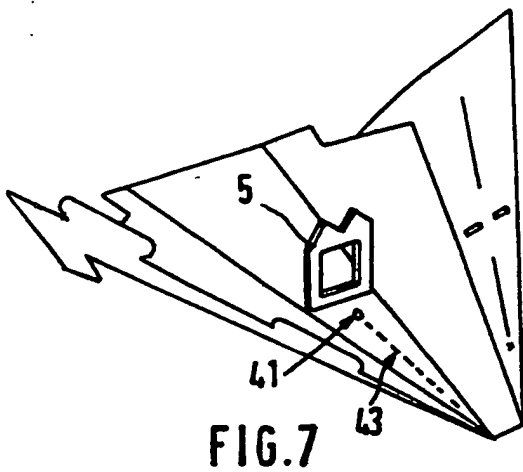


FIG. 6E

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SUBSTITUTE SHEET

INTERNATIONAL SEARCH REPORT

International Application No. **PCT/SE 89/00589**

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ⁶ According to International Patent Classification (IPC) or to both National Classification and IPC IPC5: A 01 M 23/24																	
II. FIELDS SEARCHED <div style="text-align: right; font-size: small;">Minimum Documentation Searched ⁷</div> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Classification System ⁸</td> <td style="width: 50%; border: none;">Classification Symbols</td> </tr> <tr> <td style="border: none; padding-top: 10px;">IPC5</td> <td style="border: none; padding-top: 10px;">A 01 M</td> </tr> </table> <div style="text-align: center; font-size: x-small; margin-top: 5px;">Documentation Searched other than Minimum Documentation to the extent that such Documents are included in the Fields Searched ⁹</div>			Classification System ⁸	Classification Symbols	IPC5	A 01 M											
Classification System ⁸	Classification Symbols																
IPC5	A 01 M																
SE,DK,FI,NO classes as above																	
III. DOCUMENTS CONSIDERED TO BE RELEVANT ¹⁰ <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th style="width: 10%;">Category ¹¹</th> <th style="width: 60%;">Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²</th> <th style="width: 30%;">Relevant to Claim No. ¹³</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: top;">A</td> <td>US, A, 4578893 (WICKENBERG) 1 April 1986, see abstract and figures 1,3 --</td> <td style="text-align: center; vertical-align: top;">1-3,6,8-10</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">A</td> <td>FI, A, 25127 (TAUNO VALDEMAR JÄRVINEN) 7 December 1951, see figure 1; claim 1 --</td> <td style="text-align: center; vertical-align: top;">1,8,9,10</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">A</td> <td>DE, A, 2019334 (FARBENFABRIKEN BAYER AG) 4 November 1971, see figure 1; claim 1 --</td> <td style="text-align: center; vertical-align: top;">1</td> </tr> <tr> <td style="text-align: center; vertical-align: top;">A</td> <td>DE, B, 1191167 (WALTER STROPP) 15 April 1965, see figure 4; claim 1 -- -----</td> <td style="text-align: center; vertical-align: top;">1</td> </tr> </tbody> </table>			Category ¹¹	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³	A	US, A, 4578893 (WICKENBERG) 1 April 1986, see abstract and figures 1,3 --	1-3,6,8-10	A	FI, A, 25127 (TAUNO VALDEMAR JÄRVINEN) 7 December 1951, see figure 1; claim 1 --	1,8,9,10	A	DE, A, 2019334 (FARBENFABRIKEN BAYER AG) 4 November 1971, see figure 1; claim 1 --	1	A	DE, B, 1191167 (WALTER STROPP) 15 April 1965, see figure 4; claim 1 -- -----	1
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A	DE, B, 1191167 (WALTER STROPP) 15 April 1965, see figure 4; claim 1 -- -----	1															
<div style="display: flex; justify-content: space-between; font-size: x-small;"> <div style="width: 45%;"> <p>* Special categories of cited documents: ¹⁴</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 50%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"A" document member of the same patent family</p> </div> </div>																	
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**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. PCT/SE 89/00589**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A- 4578893	01/04/86	NONE	
FI-A- 25127	07/12/51	NONE	
DE-A- 2019334	04/11/71	US-A- 3750326	07/08/73
		CH-A- 537695	31/07/73
		AT-A-B- 308460	15/05/73
DE-B- 1191167	15/04/65	NONE	

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